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December 2, 2013

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Re: **Decision Document**
NYC VCP Remedial Action Work Plan Approval
Basis School – 556 Columbia Street
Block 601, Lot 17
VCP Project #14CVCP193K

The New York City Office of Environmental Remediation (OER) has completed its review of the Remedial Action Work Plan (RAWP) dated October 2013 and Stipulation List dated November 22, 2013 for 556 Columbia Street, VCP Project #14CVCP193K. The Plan was submitted to OER under the NYC Voluntary Cleanup Program (VCP). The RAWP was released for public comment for 30 days as required by program rule. That comment period ended on December 1, 2013. There were no public comments.

Statement of Purpose and Basis

This document presents the remedy for a Voluntary Cleanup Program site known as "556 Columbia Street" site. This document is a summary of the information that can be found in the site-related reports and documents in the document repository at OER's website www.nyc.gov/oer.

The New York City Office of Environmental Remediation (the Office or OER) has established a remedy for the above referenced site. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous substances.

The decision is based on the Administrative Record of the New York City Office of Environmental Remediation (the Office or OER) for the "556 Columbia Street" site and the public's input to the proposed remedy presented by OER.

Description of Selected Remedy

The remedy selected for this "556 Columbia Street" site includes soil excavation, an engineered composite cover system, installation of a vapor barrier and passive sub-slab depressurization system.

The elements of the selected remedy are as follows:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan (CPP);
2. Performance of a Community Air Monitoring Program for particulates and volatile organic carbon compounds;
3. Establishment of Track 4 Soil Cleanup Objectives (SCOs);
4. Excavation and removal of soil/fill exceeding Track 4 Site Specific SCOs. Hot spots will be excavated to a minimum depth of three feet as determined by remedial end point sampling;
5. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media on-site;
6. Demarcation of residual soil/fill in open space areas;
7. Removal of underground storage tanks (if encountered) and closure of petroleum spills in compliance with applicable local, State and Federal laws and regulations;
8. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities;
9. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of SCOs;
10. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations;
11. Installation and operation of a passive sub-slab depressurization system located beneath all grade level portions of the building not used for parking;
12. Construction and maintenance of an engineered composite cover consisting of a concrete building slab consisting of 6 inches of concrete over 6 inches of gravel , concrete parking area consisting of 6 inches of concrete over a 6 inch of sub-base of compacted stone, concrete sidewalks consisting of 4 inches of concrete over a 6 inch of sub-base of compacted earth, and 2 feet of clean fill that meets Part 375-6.8 residential soil quality standards and groundwater protection standards in open space areas (less than 10% of the site) with a demarcation barrier overlying any residual soils to prevent human exposure to residual soil/fill remaining under the Site;
13. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations;
14. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations;
15. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
16. Submission of a Remedial Action Report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and describes all Engineering and Institutional Controls to be implemented at the Site, and lists any changes from this RAWP;
17. Submission of an approved Site Management Plan (SMP) in the RAR for long-term management of residual contamination, including plans for maintenance, inspection and certification of Engineering and Institutional Controls and reporting at a specified frequency; and
18. Institutional Controls including registration of the site with an E Designation with the NYC Department of Buildings and prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) are requirement for OER approval prior to change of land usage. Remedial activities will be

performed at the Site in accordance with this OER-approved RAWP. All deviations from the RAWP will be promptly reported to OER. Changes will be documented in the RAR.

This remedy conforms to the promulgated standards and criteria that are directly applicable, or that is relevant and appropriate and takes into consideration OER guidance, as appropriate. The remedy is protective of public health and the environment.

Date: December 2, 2013

Shaminder Chawla
Assistant Director

SITE BACKGROUND

Location:

The 556 Columbia Street Site (hereafter referred to as the "Site") is located at 556 Columbia Street in the Red Hook section of Brooklyn, New York, and is identified as Block 601 and Lot 17 on the New York City Tax Map. Figure 1 shows the Site location.

Site Features:

The Site is 49,800 -square feet and is bounded by Bay Street to the north, Sigourney Street to the south, Columbia Street to the east, and an adjacent warehouse to the west. Currently, the Site is used for parking for various tenants and contains no site improvements with the exception of an abandoned loading dock along the western property boundary. A site map is attached as Figure 1. A Site location map is attached as Figure 2.

Current Zoning/uses:

The subject property is located in a mixed use residential and light industrial area. The property is zoned m-1-1 and a special use permit is being requested from Board of Standards and Appeals (BSA) for the project.

Historical Use:

Historically, the Site has been operated as a lithographic varnish manufacturing facility and a parking area for a trucking company and other tenants. Currently, the Site is vacant.

The AOCs identified for this site include:

1. Potential releases of wastes or chemical products from lithographic varnish manufacturing.
2. Leakage from parked trucking or tenant's vehicles.

Summary of Environmental Findings:

1. Elevation of the property above mean sea level ranges from 3 to 7 feet.
2. Depth to groundwater ranges from 4 to 7 feet below grade at the Site. Groundwater flow is generally from north to south beneath the Site.
3. Depth to bedrock is approximately 150 feet at the Site.
4. The stratigraphy of the site, from the surface down, consists of 4 to 6 feet of unconsolidated fill, underlain by 2 to 3 feet of organic rich wetland deposits, underlain by 140 feet of unconsolidated coastal plain sediments of silt and sand, underlain by the Manhattan Formation.

PROPOSED DEVELOPMENT PLAN

The proposed future use of the Site will be a new charter school. Parking areas will cover the lot at the current grade. The new school will be constructed over the grade-level parking lot. The total square footage of the future school will be 80,000 square feet and will consist of five floors with no ground-level occupied spaces, with the exception of a small security outpost. Excavation depths will range from 0 to 4 feet below grade. Excavation is not anticipated below the groundwater table.

SUMMARY OF REMEDIAL INVESTIGATION

The Remedial Investigation was conducted in 2013. A full Remedial Investigation Report is available online in the document repository and the results are summarized below.

Soil:

Soil/fill samples collected during the RI showed several VOCs were detected at trace concentrations and below Track 1 Unrestricted Use SCOs. Three VOCs including 1,3,5-Trimethylbenzene (max. of 25 ppb), 2-Butanone (max. of 140 ppb), and acetone (max. 2,500 ppb) were detected above Unrestricted Use SCOs. Acetone was detected in all soil samples. Several SVOCs including benzo(a)anthracene (max 100,000 ppb), benzo(a)pyrene (max 86,000 ppb), benzo(b)-fluoranthene (max 20,000 ppb), benzo(k)fluoranthene (max 85,000 ppb), chrysene (max 100,000 ppb), Dibenz(a,h)anthracene (max 4,300 ppb), Dibenzofuran (max of 17,000 ppb), fluoranthene (max 240,000 ppb) and indeno(1,2,3-cd)pyrene (max 40,000 ppb), and pyrene (max 190,000 ppb). Of these SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)-fluoranthene, benzo(k)fluoranthene, chrysene, Dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, Phenanthrene and pyrene were detected above Restricted Residential Use SCOs.Three SVOC hotspot (max. total of 1,556 ppm) areas have been identified (in the vicinity of GB-6, GB-11 and GB-12). The PCB (PCB-1232) was detected in one sample at 297 ug/kg, exceeding Unrestricted Use SCOs but below Track 2 Restricted residential SCOs. Five pesticides including 4,4'-DDE (max of 42 ug/kg), 4,4'-DDD (max of 86.3 ug/kg), 4,4'-DDT (max of 33.6 ug/kg), cis-Chlordane (max of 271 ug/kg) and Chlordane (max of 3130 ug/kg) were detected in half the samples at concentrations exceeding Unrestricted Use SCOs. Metals including arsenic (max of 160 mg/kg) barium (max 2,900 mg/kg), cadmium (max of 11 mg/kg), chromium (max of 100 mg/kg), copper (max of 40,000 mg/kg), lead (max of 10,000 mg/kg), mercury (max of 4.8 mg/kg) and zinc (max of 8,100 mg/kg) exceeded Unrestricted Use SCOs. Of these metals, arsenic, barium, cadmium, copper, lead and mercury exceeded Restricted Residential Use SCOs. There is a copper hotspot in the vicinity of GB-7. Metals were distributed throughout the site soils. No soil samples contained VOCs, PCBs or pesticides at concentrations exceeding Restricted Residential Use SCOs.

Groundwater:

Groundwater samples collected during the RI showed no detectable concentration of PCBs, or Pesticides. Several VOCs were detected at trace concentration. Only two VOCs, isopropylbenzene (max of 62 ug/L) and total xylenes (7.8 ug/L), exceeded New York State 6NYCRR Part 703.5 Groundwater Quality Standards (GQS). Five SVOCs including benzo(a)anthracene (15 ug/L), benzo(b)-fluoranthene (16 ug/L), benzo(k)fluoranthene (7.3 ug/L), chrysene (16 ug/L), and Indeno(1,2,3-cd)pyrene (4.1 ug/L) exceeded GQS. Metals including arsenic (34ug/L), barium (3,800 ug/L),beryllium (8.5 ug/L), iron (max of 48,000 ug/L), and manganese (max of 1,500ug/L) were detected in filtered groundwater samples above GQS. MW-3 contained the highest concentrations of metal and SVOC exceedences.

Soil vapor:

The soil vapor collected during the RI were compared to the compounds listed in Table 3.1 Air Guideline Values Derived by the NYSDOH located in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion. Soil vapor samples showed generally low levels of petroleum related and chlorinated VOCs in all soil vapor samples. Most contaminant concentrations were below 50 ug/m3 except for acetone, which was detected in all samples at a maximum concentration of 1300 ug/m3 and hexane (850 ug/m3). Tetrachloroethylene was detected in 2 of the 6 samples at a maximum concentration of 2.5 µg/m3. Trichlorethylene was detected in 4 of the 6 samples all at a maximum concentration of 7.4 µg/m3. Carbon tetrachloride, and 1,1,1-trichloroethane (1,1,1-TCA), were not detected in any soil vapor samples during this RI. The TCE concentrations are above the monitoring level ranges established within the State NYS DOH soil vapor guidance matrix.

Figure 1 – Site Map

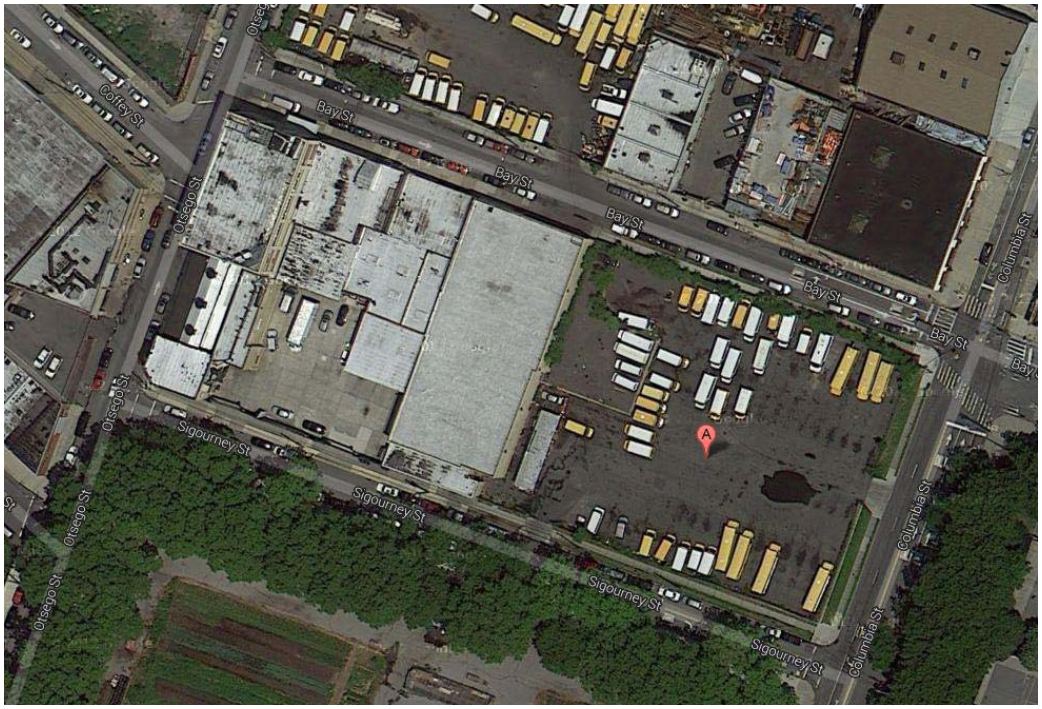

Figure 2 – Site Location Map